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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,154	04/17/2006	Takashi Murayama	01109-1000	2203

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Alexandria, VA 22314

EXAMINER

BOMKAMP, ERIC A

ART UNIT	PAPER NUMBER
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2826

MAIL DATE	DELIVERY MODE
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10/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,154

Applicant(s)

MURAYAMA ET AL.

Examiner

Eric A. Bomkamp

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


Minhloan Tran
Primary Examiner
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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to: See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/14/06, 6/7/06, 4/17/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

1. Claim 12 is objected to because of the following informalities: Line 3 recites "coated on coated on." It is suggested that one of the phrases be deleted.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 16 recites the limitation "the bended manner" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

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subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14 and 15

2. Claims 1-10_A are rejected under 35 U.S.C. 102(e) as being anticipated by Owen et al., US 7,235,878.
3. With respect to claim 1, Owen shows a light emitting device comprising: a light emitting element (88); a light conversion member (94) including a material that is capable of absorbing light emitted from said light emitting element at least partially and emitting light in different wavelength; and a heat dissipation member (94, serves as a heat dissipation member and light conversion member) that is located in a side where said light conversion member is provided as viewed from said light emitting element (Fig. 11, column 8, lines 21-67).
4. With respect to claim 2, Owen shows that said heat dissipation member has a flow path of a refrigerant (100) (Fig. 11, column 8, lines 21-67).
5. With respect to claim 3, Owen shows that said heat dissipation member includes at least one pair of an inlet (96) for admission of said refrigerant and an outlet (108) for ejection of the refrigerant that is circulated through said flow path (Fig. 11, column 8, lines 21-67).
6. With respect to claim 4, Owen shows that said heat dissipation member (67) is formed of a material that passes at least light from said light emitting element, or a material that passes light from both said light emitting element and said light conversion member (Fig. 8 shows light passing through an unlabeled, but transparent portion of the heat dissipation member (67)).
7. With respect to claim 5, the light emitting device according to claim 1, wherein said heat dissipation member is formed of two plate-shaped members (50, 52) that form the flow path for flowing cooling fluid between them, and a plurality of said light emitting elements (44, 46, 48)

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are mounted to be two-dimensionally arranged on a main surface of said heat dissipation member, wherein a plurality of protruding portions (54) are formed in the surface of said plate-shaped member inside said flow path, and at least some of said plurality of protruding portions are formed such that their centers are located between said light emitting elements and a substantially central part of said light emitting element (The text discloses that the protrusions are integrated into member (52), which includes protrusions formed on the surface of member (52) inside the flow path, Fig. 5, column 6, lines 62-67 and column 7, lines 1-14).

8. With respect to claim 6, Owen shows a light emitting element (88), a light conversion member (94) including a phosphor material that is capable of absorbing light emitted from the light emitting element at least partially and emitting light in different wavelength, and a heat dissipation member (104), wherein said heat dissipation member having a flow path of a refrigerant includes a first heat dissipation member that has a first flow path (not labeled, but indicated by arrows) in a side where said light emitting element is mounted, and a second heat dissipation member (94; serves as a heat dissipation member and a light conversion member) that has a second flow path (100) in a side where light from said light emitting element is incident, the second heat dissipation member including said light conversion member (Fig. 11, column 8, lines 21-67).

9. With respect to claim 7, Owen shows that said flow path includes a third flow path (not labeled) that connects said first flow path (not labeled) to said second flow path (100) (Fig. 11).

10. With respect to claim 8, Owen shows that one of said first and second heat dissipation members includes a pair of an inlet (96) for admission of said refrigerant and an outlet (108) for ejection of the refrigerant that is circulated through said flow path (Fig. 11).

11. With respect to claim 9, Owen shows that the first heat dissipation member (104), an insulating member (not labeled), a supporting substrate (86), and said second heat dissipation (94) member are laminated (92) (Figs. 10 and 11, column 8, lines 21-67).

12. With respect to claim 10, Owen shows that heat dissipation member has said inlet or outlet (indicated by the arrows) in at least one of main surface sides, and said insulating member and said supporting substrate have through holes that form parts of said third flow path (Fig. 11, column 8, lines 21-67).

13. With respect to claim 14, Owen shows that each or one of said first and second heat dissipation members is formed of two plate-shaped members that form the flow path for flowing cooling fluid between them, and a plurality of said light emitting elements (44, 46, 48) are mounted to be two-dimensionally arranged on a main surface of said first heat dissipation member, wherein a plurality of protruding portions are formed in the surface of said plate-shaped member inside said flow path, and at least some of said plurality of protruding portions are formed such that their centers are located between said light emitting elements and a substantially central part of said light emitting element (The text discloses that the protrusions are integrated into member (52), which includes protrusions formed on the surface of member (52) inside the flow path, Fig. 5, column 6, lines 62-67 and column 7, lines 1-14).

14. With respect to claim 15, Owen shows a light emitting device comprising a heat dissipation member that is formed of two plate-shaped members (52, 50) that form a flow path for flowing cooling fluid between them, and a plurality of light emitting elements (44, 46, 48) that are mounted to be two-dimensionally arranged on a main surface of the heat dissipation member; a plurality of protruding portions (54) are formed in the surface of said plate-shaped

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member (52) inside said flow path, and at least some of said plurality of protruding portions are formed such that their centers are located between said light emitting elements and a substantially central part of said light emitting element (The text discloses that the protrusions are integrated into member (52), which includes protrusions formed on the surface of member (52) inside the flow path, Fig. 5, column 6, lines 62-67 and column 7, lines 1-14).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al., (7,235,878) in view of Owen et al. (2005/0218468, referred hereon to as '468).

18. With respect to claim 11, Owen discloses a conductive member that is coated on at least one of main surfaces of said insulating member (column 8, lines 21-41).

Owen fails to show that the conductive member contains at least one element selected the group consisting of Au, Ag, and Al.

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However, patent application '468 teaches an LED substrate (52) coated by an electrically conductive material (62), such as gold, silver, or aluminum (paragraph [0045], Fig. 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Owen as modified by application '468 because the metal layer reflects light from the LED and also provides electrical connection for the LED (Fig. 6, paragraphs [0045]).

19. With respect to claim 12, Owen in view of '468 teach that one electrode of said light emitting element is electrically connected to the conductive member that is coated on the at least one of main surfaces of said insulating member via a conductive wire, another electrode (58) is electrically connected to said first heat dissipation member (Fig. 6, paragraphs [0045 and 0059] in '468).

20. With respect to claim 13, Owen in view of '468 shows that said heat dissipation member (67) is formed of a material that passes at least light from said light emitting element; or a material that passes light from both said light emitting element and said light conversion member (Owen, Fig. 8 shows light passing through an unlabeled, but transparent portion of the heat dissipation member (67)).

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric A. Bomkamp whose telephone number is 571-270-1559.

The examiner can normally be reached on Monday thru Friday 8:00AM-5:00PM E.S.T..

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached at 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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9-28-07